PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-179568
(43)Date of publication of application : 27.06.2000

(51)Int.Cl. F16D 9/06
F16H 35/10

(21)Application number : 10-353006
(22)Date of filing : 11.12.1998

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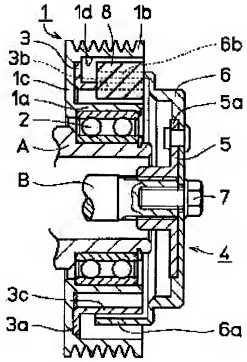
(54) POWER TRANSMISSION

(57)Abstract:
PROBLEM TO BE SOLVED: To reduce the overall length of a compressor mounted with a power transmission and to easily disengage the transmission of the power.
SOLUTION: A pulley 1 with an annular groove 1d formed therein is rotatably supported by a cylindrical projecting part A of a compressor. A hub assembly 4 is mounted on a rotary shaft B of the compressor. A cylindrical part 3c of a drive side connection member 3 fixed to a disk part 1c and a cylindrical part 6a of a driven side connection member 6 fixed to a hub 5 are fitted in the annular groove 1d of the pulley 1 in a non-contact manner. A plurality of engagement grooves 3b, 6b are formed in the cylindrical parts 3c, 6a, and rubber or plastic coupling members 8 are individually fitted to the engagement grooves 3b, 6b to integratedly engage the pulley 1 with the hub assembly 4.



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CLAIMS

[Claim(s)]
[Claim 1]A driving-side rotating member supported by a bearing by cylinder lobe characterized by comprising the following formed in housing of follower side apparatus enabling free rotation, A power transmission device in which a coupling member which combined the follower side rotating member with which the axis of rotation of said follower side apparatus projected from said cylinder lobe was equipped, and these driving-sides rotating member and the follower side rotating member was provided.
An inner cylinder part to which said bearing fitted into inner skin.
An outside cylinder part by which a pulley groove was formed in a peripheral face.
Said driving-side rotating member by which a disk part which connected these inner cylinder part and an outside cylinder part was provided, and a circular sulcus which carried out the opening was formed in a projection direction of said axis of rotation.
The follower side connecting member which was inserted into said driving-side rotating member, a driving-side connecting member rotated to one, and said circular sulcus, and was laid on top of said driving-side connecting member and a noncontact state by being provided into said circular sulcus.

[Claim 2]The 1st body of said driving-side connecting member which sets an interval to a circumferencial direction and by which two or more engagement grooves were formed in it in a power transmission device indicated to claim 1, While the 2nd body of said follower side connecting member which sets an interval to a circumferencial direction and by which two or more engagement grooves were formed in it is provided and these 1st bodies and the 2nd body are laid on top of a noncontact state in said circular sulcus, A power transmission device, wherein said driving-side rotating member and said follower side rotating member are combined by fitting said coupling member into an engagement part formed of an engagement groove of the 1st body, and an engagement groove of the 2nd body.
[Claim 3]A power transmission device indicated to claim 2, comprising:
An inside annular part to which an outside annular part into which one of bodies fits among said 1st body or said 2nd body, and a body of the other fit into said coupling member.
Two or more connection walls which set an interval to a circumferencial direction, are provided in it, and fit into said engagement groove while an articulated section which connected a these outside annular part and an inside annular part is provided and connecting an outer peripheral wall part, an inside peripheral wall part and these outer peripheral wall part, and an inside peripheral wall part with each annular part.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the power transmission device which can intercept transfer of power, when an overload occurs.
[0002]
[Description of the Prior Art]As a conventional power transmission device, what is proposed by JP,9-292003,A is typical. The driving-side rotating member by which the front housing of the continuation variable-capacity type compressor was equipped with the power transmission device of the gazette, and the follower side rotating member with which the axis of rotation of the compressor was equipped are provided, These driving-sides rotating member and the follower side rotating member have structure really connected pivotable by the elastic member made from a rubber material.
[0003]The bearing by which the driving-side rotating member of the power transmission device fitted into the cylinder lobe formed in the front housing of a compressor at one, and the slip off stop was carried out by the snap ring, The cylindrical rotor by which the outer ring of spiral wound gasket of this bearing fitted into inner skin, and the slip off stop was carried out, and the inner cylinder part which fitted into the peripheral face of this rotor and was welded, It has the disk part prolonged from the end of this inner cylinder part to radial outside, and the outside cylinder part which are prolonged from the peripheral edge of this disk part to the front housing side and by which the peripheral face was formed in the pulley groove, and the belt pulley with which the circular sulcus which carried out the opening to the front housing side was formed is formed.
[0004]The inside attachment component is being fixed to the disk part of a belt pulley by the rivet. While the inside attachment component is prolonged in radial outside from the body of the shape which circular heights and a circular crevice were formed in the circumferencial direction by turns, and lenticulated, and the one end part of this body, The inside folding part prolonged to the radial inner side from the outside folding part in which the insertion aperture of said rivet was formed, and the another side end of the body is provided in the mounting part which bulged to the disk part side of a belt pulley.
[0005]The outside attachment component fixed to the hub which spline fitting of the follower side rotating member of a power transmission device was carried out to the axis-of-rotation axis end of the compressor, and was fixed with the bolt, and this hub by the rivet is provided. The body of the shape which the outside attachment component was put on the radial outside of the body of an inside attachment component, and circular heights and a circular crevice were formed in the circumferencial direction by turns, and lenticulated, and the outside folding part of this body prolonged from the end to radial outside on the other hand, While extending from the another side

end of a body to a radial inner side, putting on the flange of a hub and being fixed by the rivet, The inside folding part by which the outside folding part of the flange of a hub, the rib for reinforcement provided in the part which counters the inside folding part of an inside attachment component in an axial direction, and an inside attachment component, and the roll off which bulged in the direction which separates from a belt pulley like a rib to the part which counters in an axial direction were formed in one is provided.

[0006]And between these outside attachment component and the inside attachment component, press fitting of the elastic member made from a rubber material which really connected these members pivotable is carried out. The annular torque variation absorption part which the elastic member was formed in the same shape as the peripheral face of the body of an inside attachment component that lenticulated, and was pressed fit in the peripheral face of said body, While consisting of the same shape as the inner skin of the body of an outside attachment component that lenticulated and being pressed fit in the inner skin of said body, a crevice is formed in one side of heights in a circumferencial direction, and the annular torque operation part in which the concave relief groove was formed is established in another side of heights.

[0007]A relief groove is designed to a torque operation part so that such a power transmission device may tend to carry out elastic deformation of the torque operation part (heights) of an elastic member, Since elastic deformation is carried out so that the heights of the outside of an elastic member may fill the space formed between the relief groove of an elastic member, and the body of an outside attachment component when the axis of rotation of a compressor locks, the transmitting power from an engine to a compressor is intercepted.

[0008]

[Problem(s) to be Solved by the Invention]Since the conventional power transmission device consists of structure which the inside attachment component of the driving-side rotating member projected from the cylinder lobe of the compressor to the axial direction and the elastic member is provided in the radial outside of the hub of the follower side rotating member, the overall-length size of the compressor with which it was equipped with this power transmission device becomes long. The conventional power transmission device is the structure where transfer of power is intercepted when an elastic member carries out elastic deformation, and after the axis of rotation of a compressor locks, it will continue rotation with an intermittent driving-side rotating member until the torque operation part of an elastic member fractures. Therefore, an adverse effect attains to the follower side apparatus of the others which power is delivered by the belt hung on a driving-side rotating member.

[0009]An object of this invention is to shorten the overall-length size of the follower side apparatus by which it was equipped with the power transmission device. It aims at providing the power transmission device which can intercept transfer of power easily at the time of overload generating.

[0010]

[Means for Solving the Problem]A power transmission device indicated to claim 1 in order to attain such a purpose, A driving-side rotating member supported by a bearing by cylinder lobe formed in housing of follower side apparatus enabling free rotation, In a power transmission device in which a coupling member which combined the follower side rotating member with which the axis of rotation of said follower side apparatus projected from said cylinder lobe was equipped, and these driving-sides rotating member and the follower side rotating member was provided, An inner cylinder part to which said bearing fitted into inner skin, and an outside cylinder part by which a pulley groove was formed in a peripheral face, Said driving-side rotating member by which a disk part which connected these inner cylinder part and an outside cylinder part was provided, and a circular sulcus which carried out the opening was formed in a projection direction of said axis of

rotation, A driving-side connecting member which it is provided into said circular sulcus and rotated to said driving-side rotating member and one, Said coupling member which combined said follower side rotating member in which the follower side connecting member which was inserted into said circular sulcus and laid on top of said driving-side connecting member and a noncontact state was provided, and said driving-side connecting member and said follower side connecting member in said circular sulcus was provided.

[0011]In a power transmission device in which a power transmission device indicated to claim 2 was indicated to claim 1, The 1st body of said driving-side connecting member which sets an interval to a circumferencial direction and by which two or more engagement grooves were formed in it, While the 2nd body of said follower side connecting member which sets an interval to a circumferencial direction and by which two or more engagement grooves were formed in it is provided and these 1st bodies and the 2nd body are laid on top of a noncontact state in said circular sulcus, Said driving-side rotating member and said follower side rotating member are combined by fitting said coupling member into an engagement part formed of an engagement groove of the 1st body, and an engagement groove of the 2nd body.

[0012]In a power transmission device indicated to claim 2, a power transmission device indicated to claim 3 to said coupling member. An outside annular part into which one of bodies fits among said 1st body or said 2nd body, and an inside annular part into which a body of the other fits, An articulated section which connected a these outside annular part and an inside annular part is provided, and while connecting an outer peripheral wall part, an inside peripheral wall part and these outer peripheral wall part, and an inside peripheral wall part, two or more connection walls which set an interval to a circumferencial direction, are provided in it, and fit into said engagement groove are provided in each annular part.

[0013]

[Embodiment of the Invention]The power transmission device shown in drawing 1 and drawing 2 as this embodiment of the invention, It is a device with which the compressor for automobile air conditioning as follower side apparatus (continuation variable-capacity type compressor) is equipped and which transmits the power of the automobile engine as driving-side apparatus to a compressor, and the top view in which the part was fractured is shown in drawing 1, and the sectional view is shown in drawing 2. The coupling member 8 which fractures the power transmission device of these drawings when the belt pulley 1 as a driving-side rotating member supported by the cylinder lobe A of the compressor enabling free rotation, the hub assembly 4 as a follower side rotating member in which the axis of rotation B of the compressor was equipped, and the load of the axis of rotation B rise is formed.

[0014]1 d of circular sulci the disk part 1c with which the bearing 2 connected the inner cylinder part 1a fitted in and fixed, the outside cylinder part 1b by which the pulley groove was formed in the peripheral face, and the end of these bodies 1a and 1b was formed in inner skin, and the belt pulley 1 carried out [circular sulci] the opening to the projection direction of the axis of rotation B are formed. The driving-side connecting member 3 is formed in 1 d of circular sulci. The outward flange 3a by which the driving-side connecting member 3 was fixed to the disk part 1c of the belt pulley 1, and the body 3c (the 1st body) by which the engagement groove 3b was formed in the position which divides a circumferencial direction into six equally are formed.

[0015]The follower side connecting member 6 fixed to the flange 5a of the hub 5 by which spline fitting of the hub assembly 4 was carried out to the axis of rotation B, and this hub 5 by two or more rivets is formed. By screwing the bolt 7 in the tapped hole of the axis of rotation B, where the end face of the axis of rotation B is contacted in the side of the follower side connecting member 6, the axis of rotation B is equipped with the hub assembly 4 at one.

[0016]As for the follower side connecting member 6, the body of ** with the stage is formed and

the major diameter opening side body 6a (the 2nd body) is inserted into the circular sulcus 1d of the belt pulley 1. The engagement groove 6b is formed in the position which divided the circumferencial direction into six equally at this body 6a. The body 6a fits into the outside of the body 3c of the follower side connecting member 3, and has the structure where the body 3c and the body 6a set radially, and were laid on top of the noncontact state.

[0017]And the coupling member 8 formed in the penetrated part (engagement part) of the radial direction formed by carrying out alignment of the engagement groove 3b of the body 3c and the engagement groove 6b of the body 6a from rubber, a plastic, etc. has fitted in separately. A section is an abbreviated H character-like member and, as for the coupling member 8, the good breaking part 8a which fitted into the engagement groove 3b of the body 3c and the engagement groove 6b of the body 6a, and the flange 8b formed in one to the both ends of this good breaking part 8a are formed.

[0018]Since the axis of rotation B will rotate to one via the coupling member 8 if the belt pulley 1 rotates with the power of an automobile engine, the power transmission device which consists of such a structure can drive a compressor. When the axis of rotation B locks, each coupling member 8 fractures and transfer of the power to the axis of rotation B is intercepted. Although the above-mentioned power transmission device explained as an embodiment is the structure which carried out division arrangement of two or more coupling members 8 at the circumferencial direction, it may combine the driving-side connecting member 3 and the follower side connecting member 6 by the coupling member 8 annular as the annular flange 8b. Inside the body 3c of the driving-side connecting member 3, the body 6a of the follower side connecting member 6 may be fitted in.

[0019]Next, the power transmission device shown in drawing 3 and drawing 4 as another embodiment is explained. Drawing 3 is a sectional view of a power transmission device, and drawing 4 is a top view of the coupling member of drawing 3. The power transmission device shown in these drawings, It is that the outside diameter size of the shape of a coupling member, the body of a driving-side connecting member, and the body of the follower side connecting member is only different from the power transmission device explained previously, and the detailed explanation which overlaps by showing the numerals already used for members other than a coupling member in a drawing is omitted.

[0020]Namely, the coupling member 9 of the power transmission device shown as another embodiment, Two or more articulated sections 12 which combined with one the inside annular part 10 into which the body 3c of the driving-side connecting member 3 fits, the outside annular part 11 into which the body 6a of the follower side connecting member 6 fits, and the peripheral face of the inside annular part 10 and the inner skin of the outside annular part 11 in the position which divides a circumferencial direction into six equally are formed. The connection walls 10c and 11c which were provided in the position which divides a circumferencial direction into six equally like the inside peripheral wall parts 10a and 11a, and the outer peripheral wall parts 10b and 11b and the articulated section 12, and connected the inside peripheral wall parts 10a and 11a and the outer peripheral wall parts 10b and 11b are formed in the inside annular part 10 and the outside annular part 11. The thickness of the articulated section 12 is formed thickly [the connection walls 10c and 11c] more thinly, and when an overload occurs in the axis of rotation B, it has the structure where the articulated section 12 is fractured.

[0021]The power transmission device in which such a coupling member 9 was formed, While fitting the inside annular part 10 of the coupling member 9 into the body 3c of the driving-side connecting member 3, fitting the connection wall 10c into the engagement groove 3b, By fitting the body 6a of the follower side connecting member 6 into the outside annular part 11 of the coupling member 9, the belt pulley 1 and the hub assembly 4 are combined with one, fitting the

connection wall 11c into the engagement groove 6b. Since the power transmission device which consists of such a structure will rotate the axis of rotation B to one via the coupling member 9 like a previous power transmission device if the belt pulley 1 rotates with the power of an automobile engine, a compressor can be driven. When the axis of rotation B locks, each articulated section 12 of the coupling member 9 fractures, and transfer of the power to the axis of rotation B is intercepted.

[0022]Although two or more articulated sections 12 which set the interval to the circumferencial direction and were provided in it are formed in the coupling member 9 of the power transmission device shown as another embodiment, the annular articulated section which is easier to fracture than the connection walls 10c and 11c may be formed.

[0023]

[Effect of the Invention]The inner cylinder part to which, as for the power transmission device of this invention, the bearing fitted into inner skin as mentioned above, The driving-side rotating member in which the circular sulcus which carried out the opening in the direction in which the disk part which connected the outside cylinder part by which the pulley groove was formed in the peripheral face, and these inner cylinder part and an outside cylinder part is provided, and the axis of rotation of follower side apparatus projects was formed, The driving-side connecting member which it is provided into said circular sulcus and rotated to said driving-side rotating member and one, The follower side rotating member with which it was inserted into said circular sulcus, said driving-side connecting member and the follower side connecting member laid on top of the noncontact state were provided, and the axis of rotation of said follower side apparatus was equipped, Since the coupling member was fractured when it was made the structure which provided the coupling member which combined said driving-side connecting member and said follower side connecting member in said circular sulcus and an overload occurred in the axis of rotation, the overall-length size of the follower side apparatus by which it was equipped with this kind of power transmission device can be shortened. When an overload occurs in the axis of rotation, transfer of power can be intercepted easily. Therefore, an adverse effect does not attain to the follower side apparatus of the others which power is delivered by the belt hung on the pulley groove of a driving-side rotating member.

[0024]The 1st body of the driving-side connecting member in which the power transmission device of this invention set the interval to the circumferencial direction, and two or more engagement grooves were formed, While the 2nd body of the follower side connecting member which sets an interval to a circumferencial direction and by which two or more engagement grooves were formed in it is provided and these 1st bodies and the 2nd body are laid on top of the noncontact state in the circular sulcus of a driving-side rotating member, Since the driving-side rotating member and the follower side rotating member were combined by fitting a coupling member into the engagement part formed of the engagement groove of the 1st body, and the engagement groove of the 2nd body, even if a coupling member fractures by the overload of the axis of rotation, a reuse can be carried out by incorporating a new coupling member.

[0025]The power transmission device of this invention a coupling member, The inside annular part into which the outside annular part into which one of bodies fits among the bodies of a driving side or the follower side connecting member, and the body of the other fit, It is provided by the articulated section which connected the these outside annular part and the inside annular part, and in each annular part. Since structure where two or more connection walls which connect an outer peripheral wall part, an inside peripheral wall part and these outer peripheral wall part, and an inside peripheral wall part were established was used, Even if a coupling member fractures by the overload of the axis of rotation, while being able to carry out a reuse by incorporating a new coupling member, since it was really considered as the coupling member of the thing, the work

incorporating it can be performed simply.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]This invention relates to the power transmission device which can intercept transfer of power, when an overload occurs.

[Translation done.]

PRIOR ART

[Description of the Prior Art]As a conventional power transmission device, what is proposed by JP,9-292003,A is typical. The driving-side rotating member by which the front housing of the continuation variable-capacity type compressor was equipped with the power transmission device of the gazette, and the follower side rotating member with which the axis of rotation of the compressor was equipped are provided, These driving-sides rotating member and the follower side rotating member have structure really connected pivotable by the elastic member made from a rubber material.

[0003]The bearing by which the driving-side rotating member of the power transmission device fitted into the cylinder lobe formed in the front housing of a compressor at one, and the slip off stop was carried out by the snap ring, The cylindrical rotor by which the outer ring of spiral wound gasket of this bearing fitted into inner skin, and the slip off stop was carried out, and the inner cylinder part which fitted into the peripheral face of this rotor and was welded, It has the disk part prolonged from the end of this inner cylinder part to radial outside, and the outside cylinder part which are prolonged from the peripheral edge of this disk part to the front housing side and by which the peripheral face was formed in the pulley groove, and the belt pulley with which the circular sulcus which carried out the opening to the front housing side was formed is formed.

[0004]The inside attachment component is being fixed to the disk part of a belt pulley by the rivet. While the inside attachment component is prolonged in radial outside from the body of the shape which circular heights and a circular crevice were formed in the circumferencial direction by turns, and lenticulated, and the one end part of this body, The inside folding part prolonged to the radial inner side from the outside folding part in which the insertion aperture of said rivet was formed, and the another side end of the body is provided in the mounting part which bulged to the disk part side of a belt pulley.

[0005]The outside attachment component fixed to the hub which spline fitting of the follower side rotating member of a power transmission device was carried out to the axis-of-rotation axis end of the compressor, and was fixed with the bolt, and this hub by the rivet is provided. The body of the shape which the outside attachment component was put on the radial outside of the body of an inside attachment component, and circular heights and a circular crevice were formed in the circumferencial direction by turns, and lenticulated, and the outside folding part of this body prolonged from the end to radial outside on the other hand, While extending from the another side end of a body to a radial inner side, putting on the flange of a hub and being fixed by the rivet, The inside folding part by which the outside folding part of the flange of a hub, the rib for reinforcement provided in the part which counters the inside folding part of an inside attachment component in an axial direction, and an inside attachment component, and the roll off which bulged in the direction which separates from a belt pulley like a rib to the part which counters in

an axial direction were formed in one is provided.

[0006]And between these outside attachment component and the inside attachment component, press fitting of the elastic member made from a rubber material which really connected these members pivotable is carried out. The annular torque variation absorption part which the elastic member was formed in the same shape as the peripheral face of the body of an inside attachment component that lenticulated, and was pressed fit in the peripheral face of said body, While consisting of the same shape as the inner skin of the body of an outside attachment component that lenticulated and being pressed fit in the inner skin of said body, a crevice is formed in one side of heights in a circumferencial direction, and the annular torque operation part in which the concave relief groove was formed is established in another side of heights.

[0007]A relief groove is designed to a torque operation part so that such a power transmission device may tend to carry out elastic deformation of the torque operation part (heights) of an elastic member, Since elastic deformation is carried out so that the heights of the outside of an elastic member may fill the space formed between the relief groove of an elastic member, and the body of an outside attachment component when the axis of rotation of a compressor locks, the transmitting power from an engine to a compressor is intercepted.

[Translation done.]

EFFECT OF THE INVENTION

[Effect of the Invention]The inner cylinder part to which, as for the power transmission device of this invention, the bearing fitted into inner skin as mentioned above, The driving-side rotating member in which the circular sulcus which carried out the opening in the direction in which the disk part which connected the outside cylinder part by which the pulley groove was formed in the peripheral face, and these inner cylinder part and an outside cylinder part is provided, and the axis of rotation of follower side apparatus projects was formed, The driving-side connecting member which it is provided into said circular sulcus and rotated to said driving-side rotating member and one, The follower side rotating member with which it was inserted into said circular sulcus, said driving-side connecting member and the follower side connecting member laid on top of the noncontact state were provided, and the axis of rotation of said follower side apparatus was equipped, Since the coupling member was fractured when it was made the structure which provided the coupling member which combined said driving-side connecting member and said follower side connecting member in said circular sulcus and an overload occurred in the axis of rotation, the overall-length size of the follower side apparatus by which it was equipped with this kind of power transmission device can be shortened. When an overload occurs in the axis of rotation, transfer of power can be intercepted easily. Therefore, an adverse effect does not attain to the follower side apparatus of the others which power is delivered by the belt hung on the pulley groove of a driving-side rotating member.

[0024]The 1st body of the driving-side connecting member in which the power transmission device of this invention set the interval to the circumferencial direction, and two or more engagement grooves were formed, While the 2nd body of the follower side connecting member which sets an interval to a circumferencial direction and by which two or more engagement grooves were formed in it is provided and these 1st bodies and the 2nd body are laid on top of the noncontact state in the circular sulcus of a driving-side rotating member, Since the driving-side rotating member and the follower side rotating member were combined by fitting a coupling member into the engagement part formed of the engagement groove of the 1st body, and the engagement groove of the 2nd body, even if a coupling member fractures by the overload of the axis of rotation, a reuse can be carried out by incorporating a new coupling member.

[0025]The power transmission device of this invention a coupling member, The inside annular part into which the outside annular part into which one of bodies fits among the bodies of a driving side or the follower side connecting member, and the body of the other fit, It is provided by the articulated section which connected the these outside annular part and the inside annular part, and in each annular part. Since structure where two or more connection walls which connect an outer peripheral wall part, an inside peripheral wall part and these outer peripheral wall part, and an inside peripheral wall part were established was used, Even if a coupling member fractures by

the overload of the axis of rotation, while being able to carry out a reuse by incorporating a new coupling member, since it was really considered as the coupling member of the thing, the work incorporating it can be performed simply.

[Translation done.]

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]Since the conventional power transmission device consists of structure which the inside attachment component of the driving-side rotating member projected from the cylinder lobe of the compressor to the axial direction and the elastic member is provided in the radial outside of the hub of the follower side rotating member, the overall-length size of the compressor with which it was equipped with this power transmission device becomes long. The conventional power transmission device is the structure where transfer of power is intercepted when an elastic member carries out elastic deformation, and after the axis of rotation of a compressor locks, it will continue rotation with an intermittent driving-side rotating member until the torque operation part of an elastic member fractures. Therefore, an adverse effect attains to the follower side apparatus of the others which power is delivered by the belt hung on a driving-side rotating member.
[0009]An object of this invention is to shorten the overall-length size of the follower side apparatus by which it was equipped with the power transmission device. It aims at providing the power transmission device which can intercept transfer of power easily at the time of overload generating.

[Translation done.]

* NOTICES *

MEANS

[Means for Solving the Problem]A power transmission device indicated to claim 1 in order to attain such a purpose, A driving-side rotating member supported by a bearing by cylinder lobe formed in housing of follower side apparatus enabling free rotation, In a power transmission device in which a coupling member which combined the follower side rotating member with which the axis of rotation of said follower side apparatus projected from said cylinder lobe was equipped, and these driving-sides rotating member and the follower side rotating member was provided, An inner cylinder part to which said bearing fitted into inner skin, and an outside cylinder part by which a pulley groove was formed in a peripheral face, Said driving-side rotating member by which a disk part which connected these inner cylinder part and an outside cylinder part was provided, and a circular sulcus which carried out the opening was formed in a projection direction of said axis of rotation, A driving-side connecting member which it is provided into said circular sulcus and rotated to said driving-side rotating member and one, Said coupling member which combined said follower side rotating member in which the follower side connecting member which was inserted into said circular sulcus and laid on top of said driving-side connecting member and a noncontact state was provided, and said driving-side connecting member and said follower side connecting member in said circular sulcus was provided.
[0011]In a power transmission device in which a power transmission device indicated to claim 2 was indicated to claim 1, The 1st body of said driving-side connecting member which sets an interval to a circumferencial direction and by which two or more engagement grooves were formed in it, While the 2nd body of said follower side connecting member which sets an interval to a circumferencial direction and by which two or more engagement grooves were formed in it is provided and these 1st bodies and the 2nd body are laid on top of a noncontact state in said circular sulcus, Said driving-side rotating member and said follower side rotating member are combined by fitting said coupling member into an engagement part formed of an engagement groove of the 1st body, and an engagement groove of the 2nd body.
[0012]In a power transmission device indicated to claim 2, a power transmission device indicated to claim 3 to said coupling member. An outside annular part into which one of bodies fits among said 1st body or said 2nd body, and an inside annular part into which a body of the other fits, An articulated section which connected a these outside annular part and an inside annular part is provided, and while connecting an outer peripheral wall part, an inside peripheral wall part and these outer peripheral wall part, and an inside peripheral wall part, two or more connection walls which set an interval to a circumferencial direction, are provided in it, and fit into said engagement groove are provided in each annular part.
[0013]
[Embodiment of the Invention]The power transmission device shown in drawing 1 and drawing 2 as

this embodiment of the invention, It is a device with which the compressor for automobile air conditioning as follower side apparatus (continuation variable-capacity type compressor) is equipped and which transmits the power of the automobile engine as driving-side apparatus to a compressor, and the top view in which the part was fractured is shown in drawing 1, and the sectional view is shown in drawing 2. The coupling member 8 which fractures the power transmission device of these drawings when the belt pulley 1 as a driving-side rotating member supported by the cylinder lobe A of the compressor enabling free rotation, the hub assembly 4 as a follower side rotating member in which the axis of rotation B of the compressor was equipped, and the load of the axis of rotation B rise is formed.

[0014]1 d of circular sulci the disk part 1c with which the bearing 2 connected the inner cylinder part 1a fitted in and fixed, the outside cylinder part 1b by which the pulley groove was formed in the peripheral face, and the end of these bodies 1a and 1b was formed in inner skin, and the belt pulley 1 carried out [circular sulci] the opening to the projection direction of the axis of rotation B are formed. The driving-side connecting member 3 is formed in 1 d of circular sulci. The outward flange 3a by which the driving-side connecting member 3 was fixed to the disk part 1c of the belt pulley 1, and the body 3c (the 1st body) by which the engagement groove 3b was formed in the position which divides a circumferencial direction into six equally are formed.

[0015]The follower side connecting member 6 fixed to the flange 5a of the hub 5 by which spline fitting of the hub assembly 4 was carried out to the axis of rotation B, and this hub 5 by two or more rivets is formed. By screwing the bolt 7 in the tapped hole of the axis of rotation B, where the end face of the axis of rotation B is contacted in the side of the follower side connecting member 6, the axis of rotation B is equipped with the hub assembly 4 at one.

[0016]As for the follower side connecting member 6, the body of ** with the stage is formed and the major diameter opening side body 6a (the 2nd body) is inserted into the circular sulcus 1d of the belt pulley 1. The engagement groove 6b is formed in the position which divided the circumferencial direction into six equally at this body 6a. The body 6a fits into the outside of the body 3c of the follower side connecting member 3, and has the structure where the body 3c and the body 6a set radially, and were laid on top of the noncontact state.

[0017]And the coupling member 8 formed in the penetrated part (engagement part) of the radial direction formed by carrying out alignment of the engagement groove 3b of the body 3c and the engagement groove 6b of the body 6a from rubber, a plastic, etc. has fitted in separately. A section is an abbreviated H character-like member and, as for the coupling member 8, the good breaking part 8a which fitted into the engagement groove 3b of the body 3c and the engagement groove 6b of the body 6a, and the flange 8b formed in one to the both ends of this good breaking part 8a are formed.

[0018]Since the axis of rotation B will rotate to one via the coupling member 8 if the belt pulley 1 rotates with the power of an automobile engine, the power transmission device which consists of such a structure can drive a compressor. When the axis of rotation B locks, each coupling member 8 fractures and transfer of the power to the axis of rotation B is intercepted. Although the above-mentioned power transmission device explained as an embodiment is the structure which carried out division arrangement of two or more coupling members 8 at the circumferencial direction, it may combine the driving-side connecting member 3 and the follower side connecting member 6 by the coupling member 8 annular as the annular flange 8b. Inside the body 3c of the driving-side connecting member 3, the body 6a of the follower side connecting member 6 may be fitted in.

[0019]Next, the power transmission device shown in drawing 3 and drawing 4 as another embodiment is explained. Drawing 3 is a sectional view of a power transmission device, and drawing 4 is a top view of the coupling member of drawing 3. The power transmission device

shown in these drawings, It is that the outside diameter size of the shape of a coupling member, the body of a driving-side connecting member, and the body of the follower side connecting member is only different from the power transmission device explained previously, and the detailed explanation which overlaps by showing the numerals already used for members other than a coupling member in a drawing is omitted.

[0020]Namely, the coupling member 9 of the power transmission device shown as another embodiment, Two or more articulated sections 12 which combined with one the inside annular part 10 into which the body 3c of the driving-side connecting member 3 fits, the outside annular part 11 into which the body 6a of the follower side connecting member 6 fits, and the peripheral face of the inside annular part 10 and the inner skin of the outside annular part 11 in the position which divides a circumferencial direction into six equally are formed. The connection walls 10c and 11c which were provided in the position which divides a circumferencial direction into six equally like the inside peripheral wall parts 10a and 11a, and the outer peripheral wall parts 10b and 11b and the articulated section 12, and connected the inside peripheral wall parts 10a and 11a and the outer peripheral wall parts 10b and 11b are formed in the inside annular part 10 and the outside annular part 11. The thickness of the articulated section 12 is formed thickly [the connection walls 10c and 11c] more thinly, and when an overload occurs in the axis of rotation B, it has the structure where the articulated section 12 is fractured.

[0021]The power transmission device in which such a coupling member 9 was formed, While fitting the inside annular part 10 of the coupling member 9 into the body 3c of the driving-side connecting member 3, fitting the connection wall 10c into the engagement groove 3b, By fitting the body 6a of the follower side connecting member 6 into the outside annular part 11 of the coupling member 9, the belt pulley 1 and the hub assembly 4 are combined with one, fitting the connection wall 11c into the engagement groove 6b. Since the power transmission device which consists of such a structure will rotate the axis of rotation B to one via the coupling member 9 like a previous power transmission device if the belt pulley 1 rotates with the power of an automobile engine, a compressor can be driven. When the axis of rotation B locks, each articulated section 12 of the coupling member 9 fractures, and transfer of the power to the axis of rotation B is intercepted.

[0022]Although two or more articulated sections 12 which set the interval to the circumferencial direction and were provided in it are formed in the coupling member 9 of the power transmission device shown as another embodiment, the annular articulated section which is easier to fracture than the connection walls 10c and 11c may be formed.

[Translation done.]

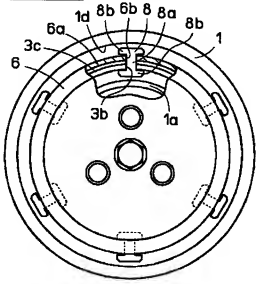
DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is the power transmission device shown as this embodiment of the invention, and is the top view in which the part was fractured.
[Drawing 2]It is a sectional view of the power transmission device of drawing 1.
[Drawing 3]It is a sectional view of the power transmission device shown as another embodiment.
[Drawing 4]It is a top view of the coupling member of drawing 3.
[Description of Notations]
1 Driving-side rotating member (belt pulley)
1 d Circular sulcus
3 Driving-side connecting member
4 the follower side rotating member (hub assembly)
6 Follower side connecting member
8 Coupling member
9 Coupling member

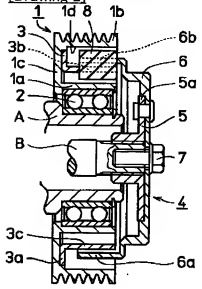
[Translation done.]

DRAWINGS

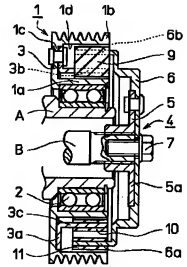
[Drawing 1]



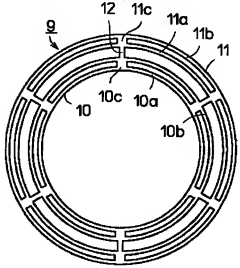
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]